UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,652	09/24/2001	Claudio De Simone	2818-58	5995

23117 7590 09/15/2003

NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER
AFREMOVA, VERA

ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/960,652	DE SIMONE, CLAUDIO	
	Examiner	Art Unit	
	Vera Afremova	1651	

-- The MAILING DATE of this communication appears n the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *20 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *35-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *35-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Status of claims

New claims 35-43 are pending and under examination. [Paper No. 7 filed 6/20/2003].

Claims 25-34 are canceled by applicant [Paper No. 7 filed 6/20/2003].

Claims 1-24 are canceled by applicant [Paper No. 4 filed 1/07/2003].

Deposit

The deposit requirement for the strain *Lactobacillus brevis* CD2 accession No. DSM 11988 has been in the Paper No. 6 filed 6/20/2003.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

New claims 35-39 and 41-43 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,716,615 [A].

Claims are directed to a method for preventing and treating various gastro-intestinal disorders wherein the method comprises step of orally administering to a subject a composition comprising an effective amount of an enzymatic preparation of alkaline sphingomyelinase in a form of live or lyophilized bacteria including lactic bacteria or bifidobacteria. Some claims are further drawn to the use of effective amounts such as 10^2 - 10^{13} CFU of lactic bacteria or bifidobacteria per gram of the composition in the method of administration. Some claims are further drawn to the use of particular species of lactic bacteria such as *Steptococcus thermophilus*, *Lactobacillus acidophilus* and representatives of the genus *Bifidobacterium* in the

composition in the method of administration. Some claims are further drawn to incorporation of milk product in the composition in the method of administration.

The claimed method is interpreted in the light of applicant's definitions in the "as-filed" specification wherein a composition comprising alkaline sphingomyelinase is a composition comprising live, lyophilized or sonicated bacteria (specification page 6, lines 20-22). Applicant has confirmed this claim interpretation (response page 6, par. 4, lines 6-8).

US 5,716,615 [A] is relied upon as explained in the prior office action and repeated herein. US 5,716,615 [A] discloses a method for preventing and treating various disorders including gastro-intestinal disorders and/or potentiating immune system (col. 2, lines 17-20) wherein the method comprises step of orally administering to a subject in need thereof (col. 3, line 42 or examples) a composition comprising an effective amount of a bacterial preparation in a form of live or lyophilized bacteria including lactic bacteria such as *Steptococcus thermophilus*, *Lactobacillus acidophilus* and representatives of the genus *Bifidobacterium* (col. 3, lines 3-12 or col. 5, lines 1-11). The effective amount is ranging between 10^9 - 10^{13} CFU of lactic bacteria per gram of the composition in the method of administration (col. 5, lines 1-11 or col. 2, line 50). The cited patent teaches incorporation of milk products such as skim milk (col. 9, line 22 or col. 10, line 6) in the composition in the method of administration.

The cited patent US 5,716,615 [A] is considered to anticipate the claimed invention because the method of the cited patent comprises the one identical active step of oral administration of identical bacterial composition in a form of live lyophilized lactic bacteria of identical species in the identical amount effective to the same patient in need of preventing and treating gastro-intestinal disorders and/or potentiating immune system. The enzymes of bacterial

origins including alkaline sphingomyelinase are an inherent component in the composition that is a whole or crude preparation of live or lyophilized bacteria. Moreover, the present invention as claimed and as disclosed does not require administration of a purified enzyme preparation. The claimed method requires the use of a specific amount of bacteria wherein this amount is identical to the amount administered in the method of the cited patent. Thus, the compositions and the prophylactic or therapeutic amounts are identical in the method of the cited patent and in the claimed method. The patients under administration in the method of the cited patent are identical to the patients of the claimed method because they are at least in need of preventing gastro-intestinal disorders as the patients in the claimed method. Therefore, the cited patent US 5,716,615 [A] is considered to anticipate the claimed invention because the method of the cited patent comprises one identical active step of administering an identical composition to an identical patient, and, thus, the intended effects of administration are identical within the meaning of the present application and claims.

Claim rejection under 35 U.S.C. 102(b) as being anticipated by WO 98/22082 [IDS-1] has been withdrawn because the method of WO 98/22082 is drawn to a topical route of administration.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

New claims 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,716,615 [A] taken with WO 98/22082 [IDS-1] and Sjokvist et al. [IDS-4].

Claims 35-39 and 41-43 as explained above. Claim 42 is further drawn to the use of use of a particular strain *Lactobacillus brevis* CD2 accession No. DSM 11988 in the composition in the method of administration.

US 5,716,615 [A] is relied upon as explained above. It is missing disclosure related to administration of a specific strain *Lactobacillus brevis* DSM 11988 as an effective agent for preventing and treating various gastro-intestinal and/or immune system disorders. But it teaches the use of a large variety of lactic bacteria and bifidobacteria belonging to various genera and species for preventing and treating various gastro-intestinal disorders, inflammations and/or immune system disorders.

WO 98/22082 [IDS-1] discloses a large variety of lactic bacteria and bifidobacteria including *Lactobacillus brevis* (page 4, par. 1) as beneficial agents for preventing and treating inflammatory disorders and as a source of sphingomyelinase. It also teaches that sphingomyelinase preparations play a critical role in maintaining health of epidermal cells and mucosa (page 2, par. 2, line 8; page 3, par. 4, last line), thus, it suggests the critical role and applications of sphingomyelinase enzymatic preparations for all anatomic sites which have mucosa and/or epidermal cells including gastro-intestinal tract.

Further, the reference by Sjokvist et al. [IDS-4] is relied upon to demonstrate that development of gastro-intestinal disorders is connected to a reduction in amounts and/or activity of sphingomyelinase or alkaline sphingomyelinase in a gastro-intestinal tract.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to practice administration of crude enzymatic preparation in a form of live, lyophilized or sonicated lactic bacteria as taught by US 5,716,615 including bacteria belonging to *Lactobacillus brevis* suggested by WO 98/22082 [IDS-1] with a reasonable expectation of success in treating various disorders including gastro-intestinal, inflammatory and/or immune system disorders as taught by US 5,716,615 [A] and WO 98/22082 [IDS-1]. One

of skill in the art would have been motivated to administer enzymatic preparations with sphingomyelinase or alkaline sphingomyelinase for at least prevention, if not a treatment, of gastro-intestinal disorders since the reduction in amounts and/or activity of alkaline sphingomyelinase in a gastro-intestinal tract is connected to a development of gastro-intestinal disorders as taught Sjokvist et al. [IDS-4]. One of skill in the art would have been motivated to administer a composition with lactic bacteria because the lactic bacteria are known to provide a spectrum of health benefits to patents under treatment including prevention and treatment of gastro-intestinal, inflammatory and/or immune system disorders. Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

The claimed subject matter fails to patentably distinguish over the state art as represented be the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

Response to Arguments

Applicant's arguments filed 6/20/2003 have been fully considered but they are not persuasive.

With respect to the cited US 5,716,615 applicant appears to argue that it teaches treatment of generic gastrointestinal disorders with lactic bacteria but the instant claim 35 discloses a treatment of specific gastrointestinal disorders. However, the treatment of disorders as claimed is an intended effect. The patient and the drug are identical in the identical one active step method as presently claimed and as disclosed by prior art. Moreover, the claimed invention is drawn to a prevention of gastrointestinal disorders in alternative to a treatment by administering identical bacteria to identical patient in need of preventing gastrointestinal disorders. Furthermore, the treatment of gastrointestinal disorders including irritable bowel syndrome as disclosed by US 5,716, 615 (example 3) can not be reasonably distinguished from the claimed treatment of gastrointestinal disorders including "inflammatory" processes in intestine and/or "allergic disorders of the gastrointestinal tracts". Applicant appears to argue that

"hypocholesterolemia" taught by US 5,716,615 is not treated by the claimed method. Yet, the claimed disorders include "disorders connected with cholesterol synthesis" which include "hypocholesterolemia".

With regard to the claim rejection under 35 USC § 103 applicant argues that the reference by Sjokvist does not provide motivation for and/or it does not suggest administration of alkaline sphingomyelinase because no correlation is found between the level of disease severity and the level of enzyme activity. Yet, the reference demonstrates the difference in enzyme activity between healthy and diseased subjects and, thus, the cited reference is still considered to provide suggestion that the diseased state is due to the enzyme deficiencies or lack of enzyme in diseased subject.

Some of the applicant's arguments are drawn to a surprising discovery that some bacteria posses high level of alkaline sphingomyelinase (response page 6, par. 6). However, something which is old such as administration of compositions with lactic bacteria for treating gastrointestinal disorders taught by the prior art does not become patentable upon discovery of a new property. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

No claims are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (703) 308-9351. The examiner can normally be reached on Monday to Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The fax phone number for this Group is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Vera Afremova

AU 1651

Septembre 12, 2003.

VA

SANDRA E. SAUCIER
PRIMARY EXAMINER